

ABSTRACT

5 The present invention provides a novel class of fluorescent cyanine dye compounds
that are modified at one of the heterocyclic ring nitrogen atoms with a mobility-modifying
moiety that permits the electrophoretic mobilities of polynucleotides labeled with the
mobility-modifying cyanine dyes to be adjusted or tuned in a predictable fashion while
retaining enzymatic activity. The ability to predictably tune the relative electrophoretic
mobilities of the dyes permits the creation of sets of mobility-matched fluorescent dyes of
a variety of structures for a variety of applications, including fluorescence-based 4-color
10 nucleic acid sequencing reactions.